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(54) **Print mounting systems**

(57) A process for producing self-adhesive photographic prints comprises intermittently applying adhesive 9 to a longitudinally advancing web 2 coated with a release backing, sequentially feeding individual photographic prints 6 into overlying contact with the respective spaced apart adhesive sections of the web, and thereafter advancing the web between pressure-applying members to releasably adhere the prints to the web.

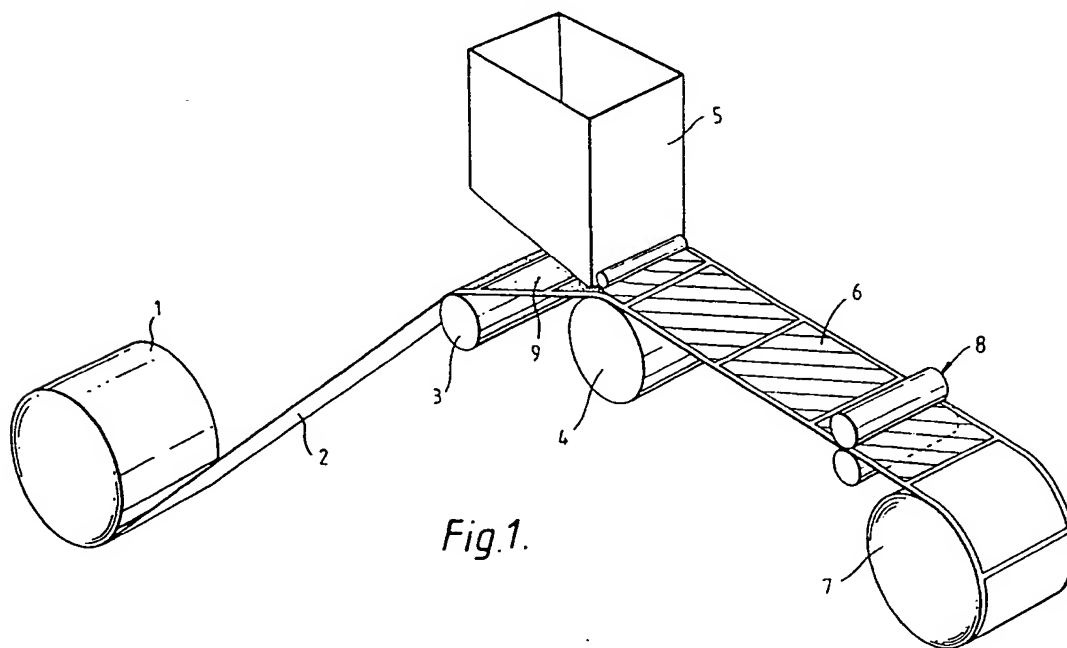


Fig.1.

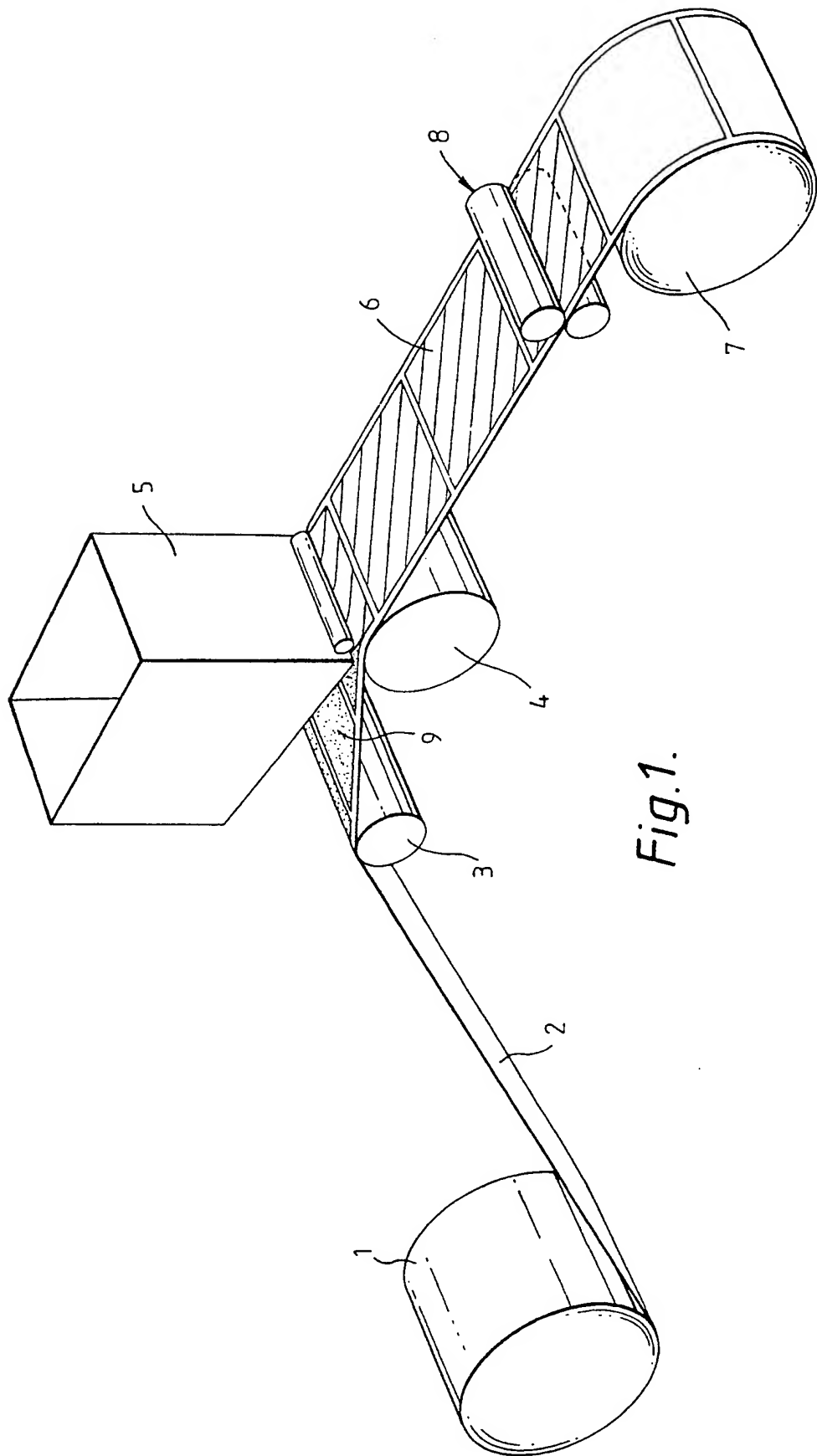


Fig. 1.

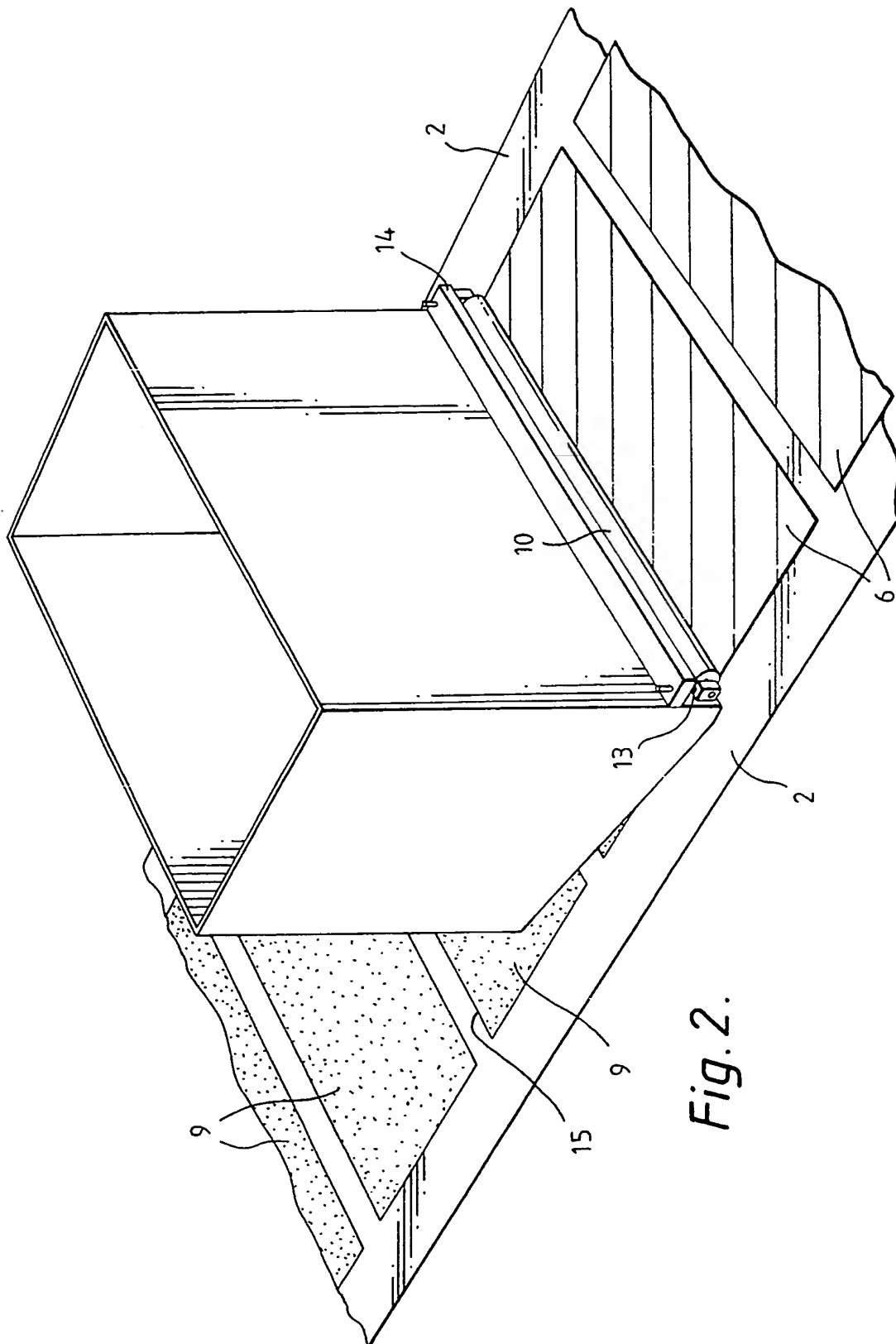
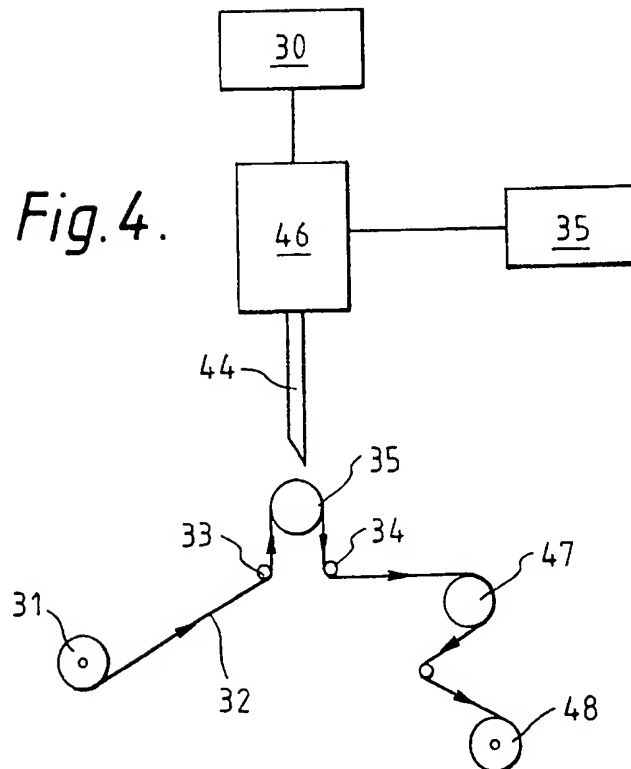
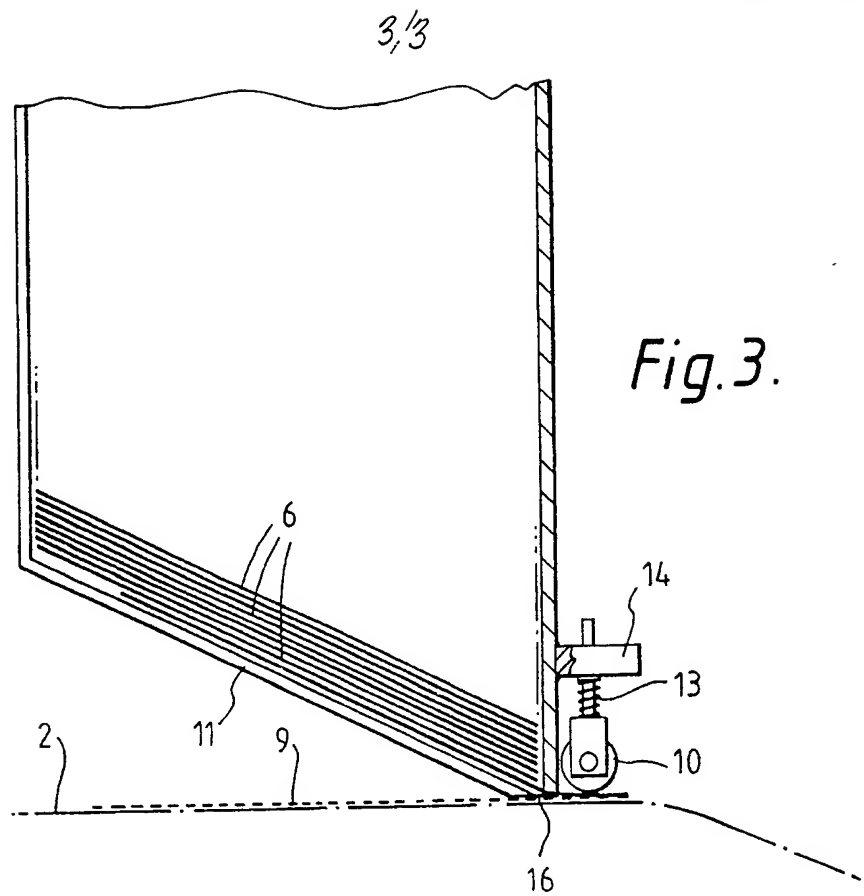


Fig. 2.



PRINT MOUNTING SYSTEMS

This invention relates to a method and apparatus for mounting self-adhesive photographic prints, particularly photographic labels.

It is already known to provide an array of self-adhesive photographic prints which can be individually peeled from a release backing. This is generally achieved by laminating a continuous roll of processed photographic paper to specially prepared adhesive transfer tape, and then die cutting the photographic paper around each print without cutting the backing tape. The system provides fully coated self-adhesive prints and has advantages over the earlier use of twin strips of adhesive finger-lift tape on each individual print.

Flat bed die cutting is however relatively slow and costly. Rotary die cutting is faster but synchronisation is more difficult and the process is only economical for high volume production of small photographic labels. Moreover, present processes for producing self-adhesive photographic prints are generally economical only when the continuous rolls of processed photographic paper are obtained by repeated exposure of a single negative, with or without a multiple cluster lens to produce multiple images from each exposure.

There is therefore the need for a process which is capable of producing a sequence of self-adhesive photographic prints of any size on a release backing

and which can operate economically with short production runs of, say, 500 prints or less.

There is a particular need for a process which can economically produce self-adhesive prints from a roll of exposed film having a sequence of different images as produced by a conventional camera.

According to one aspect of the present invention self-adhesive photographic prints are provided by sequentially feeding individual photographic prints into overlying contact with respective spaced apart adhesive sections of a longitudinally advancing web coated with a release backing, and thereafter advancing the web between pressure applying members to releasably adhere the prints to the web. The release backing preferably comprises silicon, and the spaced apart adhesive sections of the web are preferably provided by intermittently applying a hot melt adhesive to the web.

An advantage of the proposed system is that the self-adhesive prints are produced without the need for laminating and then die cutting previously prepared rolls of photographic paper and transfer tape. Moreover the size of the prints may exceed that of the adhesive sections of the web so that at least part of the perimeter of each print is unadhered to the web to assist subsequent peeling of the print from the web.

In a preferred embodiment of the invention the prints are progressively fed from a stack of discrete prints, the feed being synchronised with the passage of each adhesive section beneath the stack. In one preferred arrangement, the lowermost print in the stack is inclined for sliding contact with the web such that the

print is pulled from the stack when engaged by the leading edge of an adhesive section of the web.

One particular example of the invention is illustrated in the accompanying drawings in which:

Fig. 1 is a diagrammatic illustration of a system for mounting self-adhesive photographic prints on a previously prepared adhesive transfer tape;

Fig. 2 is a detail of the system shown in Fig. 1;

Fig. 3 is another detail of the system shown in Fig. 1 and;

Fig. 4 is a diagrammatic illustration of a system for preparing the tape used in Fig. 1.

Referring first to Fig. 4, a hot melt adhesive from a supply 30 is intermittently applied to a web 32 continuously fed from a spool 31 around smoothing rollers 33, 34 and a drum 35. The adhesive is applied under pressure from a pump 46 through a slot die 44 at predetermined intervals under control of a microprocessor 35. The web 32 with its longitudinally spaced centrally disposed adhesive section 9 (Figs. 1 and 2) is then passed around a cooling roller 47 to solidify the adhesive before it is wound up in a collector roll 48. This completes the first stage of the process.

In the second stage of the process, illustrated in Figs. 1 to 3, the supply roll 1 corresponds to the roll 48 in Fig. 4. The web 32 is then advanced around a stretch roller 3 and passes beneath a stack of discrete

photographic prints 6, contained in a hopper 5. The base 11 of the hopper is inclined to the web 32 such that the bottom edge of the lowermost print 6 in the stack projects through an outlet 16 and slidably contacts the web. Accordingly, the leading edge of each advancing adhesive section 9 pulls the lowermost print 6 from the stack, the area of each print 6 slightly exceeding the area of the adhesive layer 9 so that the adhesive is completely covered by the print and the border of the print overlaps at least the trailing edge 15 of the adhesive section.

The resulting evenly spaced prints 6 stuck to the adhesive 9 are advanced by a pair of driven rolls 8 between a top pressure roll 10 (Fig. 3) and a bottom pressure roll 4 (Fig. 1) before being collected on a reel 7. The top pressure roll 10 is biased downwardly by spring 13 and suspended beneath a mounting flange 14 secured to one side of the hopper 5.

The overlapping of the adhesive by the prints provides a finger lift by means of which the prints 6 are easily peeled from the web 32, the adhesive 9 being lifted from the web 32 along with the print to provide prints with a self-adhesive backing.

If desired, the two stages of the process may be run as a single continuous operation. In this case the web 32 after passing around the cooling roller 47 in Fig. 4 is fed directly to the stretch roller 3 in Fig. 1.

The pre-cut photographic prints 6 can be produced by repeatedly exposing a photographic negative on to a strip of photographic print paper or the like to provide a sequence of photographic images along the

strip, processing the strip, and then severing the strip into discrete photographic prints. The system may therefore use the photographic process as an alternative to conventional colour printing processes to produce self-adhesive labels, leaflets and other promotional items in full colour.

Alternatively, the pre-cut photographic prints 6 may each carry a different image. Using the above process it is possible to provide self-adhesive prints after processing a roll of film exposed in a conventional camera and cutting the roll of processed paper into individual prints. If a customer requires a self-adhesive backing for a selected number of prints, this can be done by simply placing the selected prints in the hopper 5 and advancing the web 32 until each print has been withdrawn from the hopper.

CLAIMS

1. A process for producing self-adhesive photographic prints, comprising sequentially feeding individual photographic prints into overlying contact with respective spaced apart adhesive sections of a longitudinally advancing web coated with a release backing, and thereafter advancing the web between pressure-applying members to releasably adhere the prints to the web.
2. A process according to claim 1 in which the spaced apart adhesive sections of the web are provided by longitudinally advancing the release coated web and intermittently applying adhesive to the release backing.
3. A process according to claim 2 in which the adhesive is a hot melt adhesive.
4. A process according to claim 3 in which the adhesive is intermittently extruded on to the web through a hot melt die.
5. A process according to claim 1 in which the prints are progressively fed from a stack of discrete prints, the feed being synchronised with the passage of each adhesive section beneath the stack.
6. A process according to claim 5 in which the lowermost print in the stack is inclined for sliding contact with the web such that the print is pulled from the stack when engaged by the leading edge of an

adhesive section of the web.

7. A process for producing self-adhesive photographic prints comprising severing a continuous strip of a processed photographic print medium into individual prints each carrying an exposed photographic image, stacking the individual prints, sequentially feeding the prints from the stack into overlying contact with respective spaced apart adhesive sections of a longitudinally advancing web coated with a release backing, and thereafter advancing the web between pressure-applying members to releasably adhere the prints to the web.

8. A process for producing self-adhesive photographic prints, the process comprising intermittently applying hot melt adhesive to a longitudinally advancing web coated with a release backing whereby the release backing is provided with spaced apart adhesive sections for receiving individual photographic prints.

9. Apparatus for producing self-adhesive photographic prints, the apparatus comprising means for longitudinally advancing a web coated with a release backing, means for sequentially feeding individual photographic prints into overlying contact with respective spaced apart adhesive sections of the advancing web, and means for compressing the overlying prints into engagement with the respective adhesive sections.

10. Apparatus according to claim 8 further comprising means for intermittently applying adhesive to the release backing while longitudinally advancing the web to provide the said spaced apart adhesive sections

along the web.

11. Apparatus according to claim 9 in which the adhesive is a hot melt adhesive and the adhesive applying means includes means for intermittently extruding the adhesive on to the web.

12. Apparatus according to claim 8 in which the feeding means includes a hopper for receiving a stack of the individual photographic prints, the base of the hopper being inclined downwardly toward the advancing web and the hopper including an outlet aligned with the lowermost print of the stack whereby the prints are fed consecutively through the outlet into contact with the web.

13. Apparatus according to claim 11 in which the arrangement is such that a leading edge of the lowermost print protrudes from the outlet and slidably contacts the advancing web, the print being withdrawn from the hopper when the said leading edge is engaged by an adhesive section of the web.

14. A process according to claim 1 in which the area of each print exceeds the area of the respective adhesive section such that a portion of the print overlaps the adhesive section to provide a finger-lift for peeling the print from the release backing.